CLAIMS

1.   (original) A method of communicating data, the method comprising the steps of:

transmitting a plurality of electromagnetic pulses, wherein a time period between N pulses is variable;

receiving the plurality of pulses;

determining the time period between each pulse; and

assigning a data value to N pulses based on the time period between N pulses.

2.   (original) The method of claim 1, wherein the time period between each pulse can range from about 50 pico-seconds to about 10 nano-seconds.

3.   (original) The method of claim 1, wherein N pulses can range from 1 pulse to 10 pulses.

4.   (original) The method of claim 1, wherein the assigned data value is a group of bits selected from a group consisting of: a 4-bit group, a 6-bit group, a 8-bit group, a 16-bit group, a 32-bit group, a 64-bit group and a 128-bit group.

5.   (original) The method of claim 1, wherein the electromagnetic pulse is selected from a group consisting of: ultra-wideband pulses and impulse radio pulses.

6.   (original) The method of claim 1, wherein the time period between each pulse is determined by a dispersion characteristic of a transmission media.

7.   (original) The method of claim 6, wherein the transmission media is selected from a group consisting of: air, an optical fiber ribbon, a fiber optic cable, a single mode fiber optic cable, a multi mode fiber optic cable, a twisted pair wire, an unshielded twisted pair wire, a plenum wire, a PVC wire, a coaxial cable, and an electrically conductive material.

8.   (original) The method of claim 1, wherein a minimum pulse transmission rate is determined by the steps of:

obtaining a power spectral density of the transmitted pulses;

increasing the pulse transmission rate until the power spectral density attains a predetermined level.

9.   (original) The method of claim 8, wherein the predetermined level of the power spectral density can range between about -40dBm to about -150dBm.

10.   (original) The method of claim 1, wherein the plurality of electromagnetic pulses transmit data selected from a group consisting of: telephony data, high-speed data, video data, television data, Internet communication data and audio data.

11.   (original) The method of claim 1, wherein the data is communicated through a wire network that is selected from a group consisting of: a power line, an optical network, a cable television network, a community antenna television network, a community access television network, a hybrid fiber coax system network, a public switched telephone network, a wide area network, a local area network, a metropolitan area network, a TCP/IP network, a dial-up network, a switched network, a dedicated network, a nonswitched network, a public network and a private network.

12. (original) The method of claim 11, wherein the data is communicated substantially simultaneously with a wire network communication signal.

13. (original) The method of claim 1, wherein the step of transmitting a plurality of electromagnetic pulses includes varying the time period between N pulses and varying a pulse amplitude of N pulses.

14. (original) A method of communicating data, the method comprising the steps of:

means for transmitting a plurality of electromagnetic pulses, wherein a time period between N pulses is variable;

means for receiving the plurality of pulses;

means for determining the time period between each pulse; and

means for assigning a data value to N pulses based on the time period between N pulses.

15. (original) A computer program product for directing a general purpose digital computer to perform a desired function comprising:

a set of computer readable instructions to transmit a plurality of electromagnetic pulses, wherein a time period between each pulse is variable;

a set of computer readable instructions to receive the plurality of pulses;

a set of computer readable instructions to determine the time period between each pulse; and

a set of computer readable instructions to assign a data value to N pulses based on the time period between each pulse.

16.   (original) The computer program product of claim 15, wherein the time period between each pulse can range from about 50 pico-seconds to about 10 nano-seconds.

17.   (original) The computer program product of claim 15, wherein N pulses can range from 1 pulse to 10 pulses.

18.   (original) The computer program product of claim 15, wherein the assigned data value is a group of bits selected from a group consisting of: a 4-bit group, a 6-bit group, a 8-bit group, a 16-bit group, a 32-bit group, a 64-bit group and a 128-bit group.

19.   (original) The computer program product of claim 15, wherein the electromagnetic pulse is selected from a group consisting of: ultra-wideband pulses and impulse radio pulses.

20.   (original) The computer program product of claim 15, wherein the time period between each pulse is determined by a dispersion characteristic of a transmission media.

21.   (original) The computer program product of claim 15, wherein the transmission media is selected from a group consisting of: air, an optical fiber ribbon, a fiber optic cable, a single mode fiber optic cable, a multi mode fiber optic cable, a twisted pair wire, an unshielded twisted pair wire, a plenum wire, a PVC wire, a coaxial cable, and an electrically conductive material.

22.   (original) The computer program product of claim 15, wherein a minimum pulse transmission rate is determined by the steps of:

    obtaining a power spectral density of the transmitted pulses;

    increasing the pulse transmission rate until the power spectral density attains a predetermined level.

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